is of greater functional importance than the corresponding tooth in the American form.

From the illustrations of *Amphicyon lemanensis* by Filhol[2] it is seen that the occipital condyles of that form are less sessile, the mastoid process is of larger size, and the tympanic bullæ were probably smaller. It is also seen (Pl. XI., figs. 4, 6–8) that M^3 has three roots and the crown is occupied by three distinct cusps, a distinctly more conservative character, and properly to be considered as more primitive than that of the reduced and comparatively simple crowned M^3 of *Daphœnodon superbus*. Another character which seems to indicate less specialization in the European genus is the short antero-posterior diameter of M_1, when compared with that of *Daphœnodon superbus*.

It is further seen on comparison that the skull of *Daphœnodon superbus* is less elongated than that of *Daphœnus felinus* from the American Oligocene. The base of the skull back of the pterygoids is especially shortened. The muzzle is heavier. The incisors are larger, the antero-internal tubercle of P^4 (carnassial) is less developed, M^1 and M^2 are more developed internally, and the postero-internal angles of M_1 and M_2 are more prominent. The position of P^4 is less oblique in the alveolar border than is the case with the corresponding tooth in *Daphœnus felinus*, a character tending toward conditions found in the recent dogs.

The limbs of *Daphœnodon superbus* are comparatively long and slender, the thoracic region rather light, and the tail is very long. These are characteristic structural features of *Daphœnus felinus* described by Mr. Hatcher in the *Memoirs of the Carnegie Museum*, Vol. I., pp. 66–95.

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CARNEGIE MUSEUM,
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NOTES ON MUSHROOM SPORES

IN making experiments to determine if the spores of dung-inhabiting mucors pass through the stomach and intestines of animals before they germinate, an interesting fact about the spores of mushrooms was discovered.

Some fresh horse manure, immediately after it was voided, was placed upon a sterilized plate and covered with a sterilized glass cover. On examining parts of this manure for mucor spores, there were found spores resembling mushroom spores. The plate was then set aside for three weeks when an abundant crop of mushrooms appeared. Examination proved them to be *Coprinus ephemerus* Fries.

There is a possibility that the spores might have been floating in the air and might have fallen upon the manure in the short time that it was exposed in the stable but it is not very probable that such was the case.

It seems practically demonstrated that these spores passed through the digestive tract of the horse and escaped any injurious effect from the process of digestion. They germinated and developed into mature plants in a very short time.

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TANKS FOR SOIL INVESTIGATION AT CORNELL UNIVERSITY

THERE are certain experiments involving fundamental problems in soil productiveness that can be conducted only where it is possible to accurately measure the conditions as they exist in the field, and to maintain the records through a great number of years. Some of these problems are as follows:

Effects of the continuous use of large amounts of mineral fertilizers upon the physical and chemical properties of the soil, and upon the bacterial flora and bacterial activity.

Changes that occur in a series of years when soils gradually deteriorate or improve.

Effect of different methods of soil treatment upon the loss of lime in the drainage water.

The loss of potassium and other substances occasioned by manuring with lime.

Loss of soluble salts caused by clean cultivation.

Extent to which soils under field conditions

[2] *L. c.*, Pl. XIII., Fig. 5.